boating during of WaterF with me First, I do Own:	lam a student at the University of California at Santa Cruz. I king on this project as a part of my studies. The purpose of this survey is to analyze recreational activities in the Delta and to measure any changes in recreation and visitation that might occur construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California ix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes to complete our survey?  would like to get some general information about your recreational boating activities.  You own a boat or do you rent a houseboat or other type of boat to go boating?  Yes  No  No  Do both rent and own then end survey.
2. Wh	ich best describes your boat or boats (select all that apply)?
B. E. E. F. G. H. I. J. K. L.	Cabin cruiser Wakeboard boat Ski boat Runabout Pontoon boat House boat Day boat Jet Boat Big Cat Performance boat Sail boat Kayak/Canoe/Other non-motorized boat Other:
A. I B. C. D. E.	proximately how many times per year do you visit the Delta for recreational boating?  I do not go boating in the Delta.  1-5 6-10 11-15 15-20 More than 20  Answer to 3 is A, then end survey.
AB C DEF	at recreational boating activities do you usually undertake (select all that apply)? Fishing Wake boarding Water Skiing Cruising Visiting waterside bars and restaurants Hunting Other

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages Yes, bait or fishing supplies D. Yes, other items E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Ox Mow Mowing
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X		
Long or frequent 5	1	. ^	
mph speed zones		\ \ \	
before reaching fast		/\	
water		ł.	
Nearby waterside bars	$X_{I}$		
and restaurants	(\		<b>.</b>
Turbid/muddy water			X
Heavy barge/boat			
traffic			X
Excellent			' \
birdwatching			
Loud noise (traffic,			$\times$ $^{\prime}$
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A No change in frequency of boating activity in the Delta overall
    Some reduction in frequency of boating activity in the Delta overall
    C. Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.



I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
- Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- I would be much less likely to visit the Clarksburg Marina.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- I would be much less likely to visit the Hood Supply Company.
  - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- (Ê.) No
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?
Prefer not to give contact info: or
Name:
Address:
Phone:
Email:

G. Other

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area
	D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area
	G. Other
6.	Where do you keep your boat during the summer
	A.) Away from the Delta in dry storage or at my residence.
	<ul><li>B. Away from the Delta in a slip in the water</li><li>C. In the Delta in dry storage or at my residence out of the water</li></ul>
	<ul><li>D. In the Delta in a slip in the water</li><li>E. I have a home in the Delta with an attached dock where I keep my boat</li></ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
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10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) BlMCCd
	2) Riovista dota Marina (point restourance
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars		$\sim$	
and restaurants		. / \	
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent		\ \X	
birdwatching			
Loud noise (traffic,			X
construction, etc.)			
High winds		X	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall

    Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
    - I would often avoid the Delta by switching to boat at locations other than the Delta.
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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

I would be somewhat likely to boat more often in areas where barges create muddy conditions.

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  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - (E) Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F.:) I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- $\left(\begin{array}{c} A. \end{array}\right)$
- Yes 1–5 times.
- Yes 6-10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: Charles BOYManh

Address:

Phone:

Email: Chormann 71@ 44/160. CO M

Survey taker number:		17-3
boating activities in the Delta ar during construction of the propo WaterFix project. Your respons with me to complete our survey		ion and visitation that might occur scalled the BDCP or California c. Can you take about fifteen minutes
Do you own a boat or do yo Own: Yes Rent: Yes If No to both rent and own the	ou rent a houseboat or other type of bo No No en end survey.	oat to go boating?
2. Which best describes your b	poat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other nor M. Other:	n-motorized boat	
3. Approximately how many to A. I do not go boating in the B. 1–5 C. 6–10 D. 11–15	imes per year do you visit the Delta f e Delta.	for recreational boating?
F. More than 20		
If Answer to 3 is A, then e.	nd survey.	
4. What recreational boating at A. Fishing B. Wake boarding Water Skiing Cruising Cruising Visiting waterside bars F. Hunting	ctivities do you usually undertake (se and restaurants	elect all that apply)?
G. Other		

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5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area  B) North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area
	E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> </ul>
(	I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	. When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages
(	Yes, Food and beverages Yes, bait or fishing supplies D. Yes, other items E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Viero's
	Name of Marinas: 1) Viero's  2) BLW
	3) Forth's

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	Morę Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5	Γ ′ '		
mph speed zones			
before reaching fast			
water			
Nearby waterside bars	$\sum_{i}$		
and restaurants			
Turbid/muddy water			X
Heavy barge/boat			
traffic	<u>-</u>		
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.

    E. would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- (C.) I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.

F.

I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
  - I would be much less likely to visit the Clarksburg Marina.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
  - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- (A.)

Ť.

- Yes 1–5 times.
- Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- (E) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer	not to	give	contact	info:
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or

Address:

Tony Cordero Andres Island Rodd Islaton 925-493-1971

Phone:

Email:

Survey taker	number:			17-4	
am working on boating activiti during construct WaterFix project with me to con	this project as a p es in the Delta and ction of the propos ect. Your response aplete our survey?	art of my studies. I to measure any cled Twin Tunnel Possible reposes  The second second in the seco	The purpose of this nanges in recreation roject, sometimes capted in aggregate.	ty of California at Santa Cruz. survey is to analyze recreation and visitation that might occur lled the BDCP or California Can you take about fifteen minutal boating activities.	al
Own: Yes Rent: Yes	1	No No	or other type of boat	to go boating?	
2. Which bes	t describes your bo	oat or boats (select	all that apply)?		
K. Sail bo L. Kayak	ooard boat at out on boat boat oat at at mance boat	motorized boat			
	go boating in the		u visit the Delta for i	recreational boating?	
D. 11–15 E. 15–20					
F. More t	han 20				
If Answer	to 3 is A, then en	d survey.			
A Fishin B Wake C Water D Cruisii Visitir	g boarding Skiing ng ng waterside bars a		ally undertake (selec	et all that apply)?	
F. Huntir G. Other	_				

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
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10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
] [	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Delta Marine  2) Sugar Barga
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			~/
before reaching fast			X
water			
Nearby waterside bars			
and restaurants	X		
Turbid/muddy water			× ×
Heavy barge/boat			
traffic		X	
Excellent		×	
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds		<u> </u>	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

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- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
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    - I am sure that I would not visit the Clarksburg area at all during the construction project.

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- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.

F.

- B. Yes 6–10 times
- C. Yes 11–20 times
- Yes more than 20 times
- 23. Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: Hayla Botorina

Address:

Phone:

Email: Kaylabetorina Gahoo, Com

Survey	taker number:	17	-H-5	
am wor boating during WaterF with me	activities in the De construction of the pix project. Your reset to complete our su	as a part of my studio lta and to measure an proposed Twin Tunne sponses will only be r urvey?	es. The purpose of the ychanges in recreation of the Project, sometimes eported in aggregate.	rsity of California at Santa Cruzis survey is to analyze recreation and visitation that might occidented the BDCP or California Can you take about fifteen minuted to be contained activities.
1. Do Own: (	- 1	do you rent a housebo No	at or other type of bo	at to go boating?
Rent:	Yes	No		
If No to	o both rent and ow	n then end survey.		
A. B. C. D. E. F. G. H. I. J. K. L. M. 3. App	Cabin cruiser Wakeboard boat Ski boat Runabout Pontoon boat House boat Day boat Jet Boat Big Cat Performance boat Sail boat Kayak/Canoe/Othe Other:			r recreational boating?
A. J B. C.	f do not go boating in 1–5 6–10 11–15		you visit the Delta to	r recreational boating?
E.	15-20			
F.	More than 20	1		
If A	Answer to 3 is A, th	en end survey.		
А. В.	Fishing Wake boarding Water Skiing Cruising	ing activities do you u	isually undertake (sel	ect all that apply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
ļ	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			
water	`\		
Nearby waterside bars			
and restaurants			
Turbid/muddy water	•		
Heavy barge/boat	-		
traffic		1	
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central\_Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
    C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - (C) I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?

A B This is not a concern for me.

I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?

A. I have no reaction one way or the other.

B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

E.

I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.

    I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
  - 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
  - A. I would be somewhat more likely to visit the Hood Supply Company.
  - B. I would be much more likely to visit the Hood Supply Company.
  - C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
  - D. I would be somewhat less likely to visit the Hood Supply Company.
  - E. I would be much less likely to visit the Hood Supply Company.
    - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6-10 times
- C. Yes 11–20 times
- D. Yes more than 20 times



F

- .
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact into:	
or	
Name: Ted Robertson	Rad ameron
Address: 3110 Ban Add Cambridge	Roda Color
Phone: (550)-609 0550	95682
Email:	

Survey taker number: 17 #17-4
Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?  A Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:
<ul> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> <li>If Answer to 3 is A, then end survey.</li> </ul>
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other</li> </ul>

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages  Yes, bait or fishing supplies  Yes, other items  E. No
11	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1) FHv's
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	$\times$		
Long or frequent 5			
mph speed zones		~/	
before reaching fast		<u> </u>	!
water			
Nearby waterside bars	,		
and restaurants	<u> </u>		
Turbid/muddy water			X
Heavy barge/boat			,
traffic			
Excellent		<b>✓</b>	
birdwatching			
Loud noise (traffic,			
construction, etc.)		X	
High winds		X	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

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There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - No change in frequency of boating activity in the Delta overall

    Some reduction in frequency of boating activity in the Delta overall

    Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - (A) No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- This is not a concern for me. A.
- I would be somewhat likely to avoid areas where barges create muddy conditions. В.
- I would be very likely to avoid areas where barges create muddy conditions. C.
- I would be somewhat likely to boat more often in areas where barges create muddy conditions. E.
  - I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- Which of the following best describes your reaction to DWR's intention to implement a barge 17. operations plan?
- I have no reaction one way or the other. A.
- I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and В. general impacts to recreation.
- I am very confident that DWR will make a good faith effort to reduce muddy water and general C. impacts to recreation.
- I somewhat confident that DWR will not make a good faith effort to reduce muddy water and D. general impacts to recreation.
  - المرابعة المعارفة ال impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
  - I would be somewhat less likely to visit the Clarksburg area.

    I would be much less likely to visit the Clarksburg area.
    - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
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  - I would be much less likely to visit the Clarksburg Marina.
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- The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F) I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- (B)
- Yes 1-5 times.
- Yes 6–10 times
- Yes 11-20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- (E) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Οľ

Name: ROCHEL Warver

Address: 220 Trimity Court

Phone: 916-622-1112

Email: frogula 24 cyaloo. com

5. Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
West Delta around Antioch Suisun Marsh area B North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C South Delta around Discovery Bay area C Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6. Where do you keep your boat during the summer
A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water  In the Delta in dry storage or at my residence out of the water  In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
7. If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8. Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9. If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
<ul> <li>10. When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A. Yes, Gas</li> <li>B. Yes, Food and beverages</li> <li>C. Yes, bait or fishing supplies</li> <li>D. Yes, other items</li> <li>E. No</li> </ul>
11. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
Name of Marinas: 1) Spurg Warber
2) Delta bang
Name of Marinas: 1) Speed howber  2) Delta bay  3) Walnut Grave  Evel boarn  ( assument)
Freeboard

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	<u> </u>		
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

No

Yes

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - Some reduction in frequency of boating activity in the Delta overall Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the
- location of your boating activity? No change in location of my boating activity.
- 2) I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat
    - Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
  - 1 would be somewhat less likely to visit the Clarksburg area.
    - I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- The Clarksburg Marina is located across the river and a little over a quarter of a mile from the 20. intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- I would be somewhat more likely to visit the Clarksburg Marina. A.
- I would be much more likely to visit the Clarksburg Marina. В.
- The construction would not effect the likelihood of me visiting the Clarksburg Marina. C.
- I would be somewhat less likely to visit the Clarksburg Marina. D.
- I would be much less likely to visit the Clarksburg Marina.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
- The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy 21. construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- I would be somewhat more likely to visit the Hood Supply Company. A.
- I would be much more likely to visit the Hood Supply Company. В.
- The construction would not effect the likelihood of me visiting the Hood Supply Company. C.
  - I would be somewhat less likely to visit the Hood Supply Company.
- I would be much less likely to visit the Hood Supply Company. I am sure I would not visit the Hood Supply Company during the construction project.

Norse carries in the water Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so 22. how often?
- Yes 1-5 times. A.
- Yes 6–10 times В.
- Yes 11-20 times Yes more than 20 times
- No.
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows 23. Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - It is somewhat likely that I will use the area. Α.
- It is very likely that I will use the area.
  - It is somewhat unlikely that I will use the area.
- It is very unlikely that I will use the area.
- I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Mrckey Selard Address: 3356 Sing Hawber Drive

Phone: 914-175-1455

Sunshine @ snugharber. net

Survey	taker number: $(0)$	(_)	U
boating c during c WaterFi with me	. I am a student at the University of Californ Ring on this project as a part of my studies. The purpose of this survey is to a activities in the Delta and to measure any changes in recreation and visitation onstruction of the proposed Twin Tunnel Project, sometimes called the BDC x project. Your responses will only be reported in aggregate. Can you take a to complete our survey?	nalyze re n that mig P or Cali about fift	ecreational ght occur Ifornia
A	you own a boat or do you rent a houseboat or other type of boat to go boating	<u>;</u> ?	
Own: \ Rent:	Yes No		
	both rent and own then end survey.		
	ch best describes your boat or boats (select all that apply)?		
B. C. D. E. F. G. H. I. J. K. L.	Cabin cruiser Wakeboard boat Ski boat Runabout Pontoon boat House boat Day boat Jet Boat Big Cat Performance boat Sail boat Kayak/Canoe/Other non-motorized boat Other:		
A. I B. C. D. E.	roximately how many times per year do you visit the Delta for recreational b do not go boating in the Delta. 1–5 6–10 11–15 15–20 More than 20	oating?	
If A	nswer to 3 is A, then end survey.		
A. B. C. D E. F.	at recreational boating activities do you usually undertake (select all that appl Fishing Wake boarding Water Skiing Cruising Visiting waterside bars and restaurants Hunting Other	y)?	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
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9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D. then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5	1		
mph speed zones	<i>∨</i>		
before reaching fast water	/		
Nearby waterside bars	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
and restaurants			
Turbid/muddy water			
Heavy barge/boat	\ \ \		
traffic	·		
Excellent			
birdwatching		·	
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - No change in frequency of boating activity in the Delta overall

    Some reduction in frequency of boating activity in the Delta overall

    Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - (A). No change in location of my boating activity.
    - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.

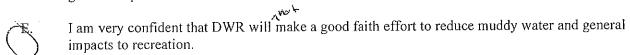
I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E.) Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- [D]. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- The construction would not effect the likelihood of me visiting the Clarksburg Marina.
  - I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact into:	
or _/	
Name: VIWCE MEYER	
Address:	
Address: 14 BLACKWODS COUNT	^
Phone:	Majort
	/ () / (NOY)
Email: 310-3560	
Princyer 70.7 @ amail. Com	
1° 100 40 1 707 =	
(9) cm 1	

Survey taker number: Sylven	15-9
Hi, my name is	lyze recreational at might occur or California out fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.	
2. Which best describes your boat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:  3. Approximately how many times per year do you visit the Delta for recreational boar A. I do not go boating in the Delta.	ting?
B. 1–5 C. 6–10	
D. 11–15	
E. 15–20	
(F.) More than 20	
If Answer to 3 is A, then end survey.	
4. What recreational boating activities do you usually undertake (select all that apply) A. Fishing	?
B. Wake boarding	
C. Water Skiing	
D. Cruising  C. Visiting waterside bars and restaurants	
F. Hunting	
G. Other	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
<ol> <li>8.</li> <li>9.</li> </ol>	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat  If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1)
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5 mph speed zones			
before reaching fast water	V		
Nearby waterside bars and restaurants	V		
Turbid/muddy water	V		
Heavy barge/boat traffic	V		
Excellent birdwatching		V	
Loud noise (traffic, construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall B.) Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- E. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
  - The construction would not affect the likelihood of me visiting the Clarksburg area.
  - I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- I would be somewhat less likely to visit the Clarksburg Marina.

  I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A Yes 1-5 times. B. Yes 6-10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E No
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: M. Ke Leaky Address: 1673 Governed C woodlord C1 95695

Phone: 530 662 4707

Email:

Survey taker number:\_ . I am a student at the University of California at Santa Cruz. I Hi, my name is am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey? First, I would like to get some general information about your recreational boating activities. 1. Do you\_own a boat or do you rent a houseboat or other type of boat to go boating? No Own: (Yes ) Rent: Yes No If No to both rent and own then end survey. 2. Which best describes your boat or boats (select all that apply)? ∕Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other: 3. Approximately how many times per year do you visit the Delta for recreational boating? A. I do not go boating in the Delta. B'. )1-5 C. 6–10 D. 11-15 E. 15-20 F. More than 20 If Answer to 3 is A, then end survey. 4. What recreational boating activities do you usually undertake (select all that apply)? A. Fishing B. Wake boarding C. Water Skiing D) Cruising E. Visiting waterside bars and restaurants

F. Hunting G. Other \_\_\_\_

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area C. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
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7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
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10	. When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  (A) Yes, Gas (B) Yes, Food and beverages (C) Yes, bait or fishing supplies (D) Yes, other items
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Condition	More Likely	No Change	Less Likely
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Excellent birdwatching	-		
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High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
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  - D. Increase in frequency of boating activity in the Delta overall.
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- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?



This is not a concern for me.

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- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
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  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
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- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
    - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- A. I would be somewhat more likely to visit the Hood Supply Company.
  - I would be much more likely to visit the Hood Supply Company.

The construction would not effect the likelihood of me visiting the Hood Supply Company.

- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- Yes 1–5 times.
  - B. Yes 6–10 times
  - C. Yes 11–20 times
  - D. Yes more than 20 times
  - E. No.
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
  - D. It is very unlikely that I will use the area.
  - E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: Paul Carroll

Address: 1005 Nepture Court, Surson City, 94585

Phone: (707) - 427-0346

Email: paul \_ carroll@concast.not

Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?  (A) Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:  3. Approximately how many times per year do you visit the Delta for recreational boating? A. I do not go boating in the Delta. B. 1-5 C. 6-10 D. 11-15 E. 15-20 F. More than 20 If Answer to 3 is A, then end survey.
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A.) Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other Shire</li> </ul>

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  (B) North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area  G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
(	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat  If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1)
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely/	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones	(		
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent			3 mareness
birdwatching			
Loud noise (traffic,	and the same of th		
construction, etc.)	300		
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

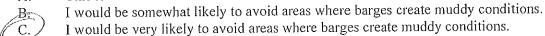
The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity. B. would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.



I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
    - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.

(F.

I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- F.) I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
  - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times



- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- (E.) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Οľ

Name: Time O Donnell

Address: 568 Deflores CiR,

Phone: 707-330-5229

Email: TM 94571@ MALEO, COM

Survey taker number:	<u> </u>	(AMM)
am working on this project as a part of m boating activities in the Delta and to mea during construction of the proposed Twir WaterFix project. Your responses will or with me to complete our survey?	. I am a student at the University of California by studies. The purpose of this survey is to anal asure any changes in recreation and visitation the In Tunnel Project, sometimes called the BDCP only be reported in aggregate. Can you take about formation about your recreational boating activation.	llyze recreational nat might occur or California out fifteen minutes
1. Do you own a boat or do you rent a hown: Yes No Rent: Yes No If No to both rent and own then end su	houseboat or other type of boat to go boating?	
A. I do not go boating in the Delta.  B) 1-5 C. 6-10		nting?
D. 11–15 E. 15–20 F. More than 20 If Answer to 3 is A, then end surve	e <b>y.</b>	
4. What recreational boating activities of Fishing B. Wake boarding Water Skiing D. Cruising Cruising Visiting waterside bars and resta F. Hunting G. Other	do you usually undertake (select all that apply) aurants	?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  (B) North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  (C. South Delta around Discovery Bay area  (D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  (E) Clarksburg, Hood, Walnut Grove, Locke area.  (E) Stockton, Windmill Cove area  (G. Other)
6.	Where do you keep your boat during the summer
6	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water In the Delta in a slip in the water L. In the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
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9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas Yes, Food and beverages Yes, bait or fishing supplies Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Polity Modern 2) Northbody 3)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	1		
Long or frequent 5			
mph speed zones			X
before reaching fast			/ \
water			
Nearby waterside bars	X		
and restaurants	/ \	7.0	
Turbid/muddy water			
Heavy barge/boat		1	
traffic			_/\
Excellent	X		
birdwatching	/\		
Loud noise (traffic,			
construction, etc.)			
High winds		<u></u>	LX

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

No

Southern California cities.

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B Some reduction in frequency of boating activity in the Delta overall
  - Significant reduction in frequency of boating activity in the Delta overall
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  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
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- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

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- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.

Е.

F.

- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D.\ I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- B. I would be much more likely to visit the Hood Supply Company.
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- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- (F.) I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?



Yes 1–5 times.

Yes 6-10 times

- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to	give	contact	info:
---------------	------	---------	-------

or

Michele Leyva

Address: 442 SUMMEN SET drive Rio Vista 9457/

Phone:

408- 910-9824

Email:

MLLYV2110 COMCOST- net

4. What recreational boating activities do you usually undertake (select all that
A) Fishing
B. Wake boarding
C) Water Skiing

D. Cruising

E) Visiting waterside bars and restaurants

F. Hunting

G. Other

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
The state of the s	West Delta around Antioch Suisun Marsh area B North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C South Delta around Discovery Bay area D Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area C Clarksburg, Hood, Walnut Grove, Locke area. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A) Yes, Gas B. Yes, Food and beverages Yes, bait or fishing supplies D. Yes, other items E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Tower Park  2) BBW, Bull frog  3) Pivales lair, hair tower park

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent			
birdwatching			
Loud noise (traffic,		$\vee$	
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - (E.) will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - (E.) I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?

A. I have no reaction one way or the other.

- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

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Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
- Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  E. I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
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- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
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Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.

È

- B. Yes 6–10 times
- C. Yes 11–20 times
  D. Yes more than 20 times
  No.
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
  - D. It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: EMery Lesco

Address: 110 Stretter Creek Shetter Cove Dr. HALF Mcow BLAS, Ch 94019

Email: every lesco@gnail.com

Survey taker number:		3	-2
Hi, my name isam working on this project as a boating activities in the Delta a during construction of the prop WaterFix project. Your respon with me to complete our survey First, I would like to get some a	nd to measure any chang osed Twin Tunnel Project ses will only be reported ??	ges in recreation and visite ct, sometimes called the E in aggregate. Can you to	ation that might occur  BDCP or California  ake about fifteen minutes
1. Do you own a boat or do you own: Yes Rent: Yes If No to both rent and own the	No No	her type of boat to go boa	ating?
2. Which best describes your	boat or boats (select all t	that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other no M. Other:			
3. Approximately how many A. I do not go boating in the B. 1-5 C. 6-10 D. 11-15 E. 15-20 F. More than 20		sit the Delta for recreation	nal boating?
If Answer to 3 is A, then	end survey.		
<ul> <li>4. What recreational boating at A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars</li> <li>F. Hunting</li> </ul>		undertake (select all that	apply)?
G. Other			

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
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11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
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12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
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High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

√ Yes

No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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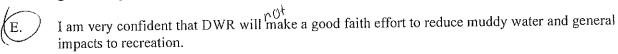
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- B. I would be much more likely to visit the Clarksburg area.
- The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.

  E. I would be much less likely to visit the Clarksburg area.
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- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- 23. Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up sur	vey if
there are changes to the proposed project later?	

Prefer not to give contact info:

or

Name:

Address:

Phone:

Email: 28 88 Ford 50@ gment, com

Survey	taker number:	<u> </u>	3-14
boating during of WaterF with me	activities in the Delta and construction of the proper ix project. Your response to complete our survey	nd to measure any changes in rec osed Twin Tunnel Project, somet ses will only be reported in aggre	Iniversity of California at Santa Cruz. I of this survey is to analyze recreational reation and visitation that might occur imes called the BDCP or California egate. Can you take about fifteen minutes creational boating activities.
Own: Rent:	(Yes)	ou rent a houseboat or other type No No en end survey.	of boat to go boating?
2. Wh	ich best describes your l	ooat or boats (select all that apply	r)?
B. D. E. F. G. H. I. J. K. L.	Cabin cruiser Wakeboard boat Ski boat Runabout Pontoon boat House boat Day boat Jet Boat Big Cat Performance boat Sail boat Kayak/Canoe/Other not Other:	n-motorized boat	
A. I B. C. D. E.	proximately how many to do not go boating in the 1-5 6-10 11-15 15-20 More than 20	imes per year do you visit the De e Delta.	lta for recreational boating?
If A	Answer to 3 is A, then e	nd survey.	
A. B. C. D. E. F.	nat recreational boating a Fishing Wake boarding Water Skiing Cruising Visiting waterside bars Hunting Other	ctivities do you usually undertak and restaurants	e (select all that apply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A West Delta around Antioch Suisun Marsh area  B North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  To the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies Yes, other items No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) De Ja Maning
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing		V	
Long or frequent 5			
mph speed zones		i/	
before reaching fast			
water			
Nearby waterside bars			
and restaurants		× ./_	
Turbid/muddy water			
Heavy barge/boat			
traffic		/	
Excellent		/	
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - As No change in frequency of boating activity in the Delta overall
    - B. Some reduction in frequency of boating activity in the Delta overall
    - C. Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
- A No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

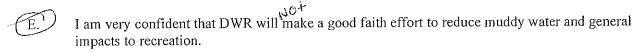
- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
- Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- ZĒ> I would be much less likely to visit the Clarksburg area.
  - F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
  - I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times



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- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Pan Mahoney
Address: 7940 Enight Rd
Phone:

Phone:

Email:

Survey taker number: it - 2
Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own Yes No  Rent: Yes  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?
A. Cabin cruiser B. Wakeboard boat C Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:
<ul> <li>3. Approximately how many times per year do you visit the Delta for recreational boating?</li> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>
If Answer to 3 is A, then end survey.
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A. Fishing</li> <li>B. Wake boarding</li> <li>Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> </ul>
G. Other

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
()	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area  G. Other
6.	Where do you keep your boat during the summer
Ó	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
/	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) LUC CNOAM SUOP  2) B D SCOVEN BOY

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat		1	***************************************
traffic		· / / / /	
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)		V	
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
- (E.) I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E./I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- (C) I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.

E.

- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - (E) Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
  - I would be somewhat less likely to visit the Clarksburg area.
    - I would be much less likely to visit the Clarksburg area.
    - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E) I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- É. I would be much less likely to visit the Hood Supply Company.
  - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
  Yes more than 20 times
  - No.

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- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name:

Address:

Phone:
Email: by Ar Alex M98 o 9MAIL-COM

Survey taker number:	3
Hi, my name is I am a student at the University of am working on this project as a part of my studies. The purpose of this surv boating activities in the Delta and to measure any changes in recreation and during construction of the proposed Twin Tunnel Project, sometimes called WaterFix project. Your responses will only be reported in aggregate. Can y with me to complete our survey?  First, I would like to get some general information about your recreational be	ey is to analyze recreational visitation that might occur the BDCP or California rou take about fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat to go Own:  No Rent: Yes  No If No to both rent and own then end survey.	o boating?
2. Which best describes your boat or boats (select all that apply)?	
<ul> <li>A. Cabin cruiser</li> <li>B. Wakeboard boat</li> <li>C Ski boat</li> <li>D. Runabout</li> <li>E. Pontoon boat</li> <li>F. House boat</li> <li>G. Day boat</li> <li>H. Jet Boat</li> <li>I. Big Cat</li> <li>J. Performance boat</li> <li>K. Sail boat</li> <li>L. Kayak/Canoe/Other non-motorized boat</li> <li>M. Other:</li> </ul>	
<ul> <li>3. Approximately how many times per year do you visit the Delta for recre <ul> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> </ul> </li> </ul>	eational boating?
D. 11–15 E. 15–20	
F. More than 20	
If Answer to 3 is A, then end survey.	
<ul> <li>4. What recreational boating activities do you usually undertake (select all A. Fishing</li> <li>B. Wake boarding</li> <li>C Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> </ul>	that apply)?
F. Hunting G. Other	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
v	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area South Delta around Discovery Bay area B. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?  ———————————————————————————————————
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	<ul> <li>When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A Yes, Gas</li> <li>B Yes, Food and beverages</li> <li>C Yes, bait or fishing supplies</li> <li>D Yes, other items</li> <li>E. No</li> </ul>
ì	1. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Herman & Holen's (closed now)  2) Tower park
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			<b>V</b>
water			
Nearby waterside bars		of the second se	
and restaurants		The state of the s	
Turbid/muddy water			
Heavy barge/boat			
traffic		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Excellent			
birdwatching		<u> </u>	
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C) Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - (C) I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
    - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
    - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- (C. I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- E. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
    - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
  - I would be much more likely to visit the Clarksburg area.

    The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.

I would be much more likely to visit the Clarksburg Marina.

- The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
  - I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
  - Yes 11–20 times
    - Yes more than 20 times
    - No
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Dennis Den Kulberg
Address: 24 Wispering Way

Phone: (209) 456-0054

Email: Tuyen Kulberg@yahoo.com

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Survey taker n	umber:		13
boating activities during construct WaterFix project with me to comp	. I am a strathis project as a part of my studies. es in the Delta and to measure any cation of the proposed Twin Tunnel Part. Your responses will only be repellete our survey?	The purpose of this survey is changes in recreation and visita Project, sometimes called the B orted in aggregate. Can you ta	to analyze recreational tion that might occur DCP or California ke about fifteen minutes
Own: Yes Rent: Yes	n a boat or do you rent a houseboat No No ent and own then end survey.	or other type of boat to go boa	ting?
A. Cabin c B. Wakebo C. Ski boa D. Runabo E. Pontoor F. House b G. Day boa H. Jet Boa I. Big Cat J. Perform K. Sail boa L. Kayak/o M. Other:  3. Approximat	pard boat t t put n boat poat at t t		al boating?
B. 1–5 C. 6–10 D. 11–15 E. 15–20 F More th			
A. Fishing B. Wake b C. Water S (D) Cruising	oarding Skiing g g waterside bars and restaurants	ually undertake (select all that a	ipply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
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6.	Where do you keep your boat during the summer
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11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1) ( ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
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12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing		<u> </u>	
Long or frequent 5			,
mph speed zones			
before reaching fast			V
water			
Nearby waterside bars			
and restaurants			<u></u>
Turbid/muddy water			
Heavy barge/boat	ı	/	
traffic		V	
Excellent		. /	
birdwatching			
Loud noise (traffic,			. /
construction, etc.)			<u> </u>
High winds			

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This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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  - A. No change in frequency of boating activity in the Delta overall
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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
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- C. I would be very likely to avoid areas where barges create muddy conditions.
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- Once construction of the intakes begins in the Clarksburg area, which best describes your response?
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- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
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Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.

E.`

- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: KEN DAUS

Address: 169 W. BRANNAN ISLAND PD. G-24

Phone: (916) 706-9059

Email: NETWHOP & AOL, com

Survey taker number: 01/07	1-11
Hi, my name is I am a student at the Universam working on this project as a part of my studies. The purpose of this boating activities in the Delta and to measure any changes in recreation during construction of the proposed Twin Tunnel Project, sometimes of WaterFix project. Your responses will only be reported in aggregate. with me to complete our survey?  First, I would like to get some general information about your recreation.	n and visitation that might occur alled the BDCP or California Can you take about fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat Own:  No  Rent: Yes No  If No to both rent and own then end survey.	at to go boating?
2. Which best describes your boat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:	
3. Approximately how many times per year do you visit the Delta for A. I do not go boating in the Delta.  B. 1-5 C. 6-10 D 11-15 E. 15-20 E. Many then 20	r recreational boating?
F. More than 20  If Answer to 3 is A, then end survey.	
<ul> <li>4. What recreational boating activities do you usually undertake (sele A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> </ul>	ect all that apply)?
G. Other	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
C	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
. (	. When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas  B. Yes, Food and beverages  C. Yes, bait or fishing supplies  D. Yes, other items  E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1) The Point
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely/	No Change	Less Likely
Excellent fishing	<b>√</b>		
Long or frequent 5			1
mph speed zones			
before reaching fast			
water			
Nearby waterside bars	^		
and restaurants	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
Turbid/muddy water	<u> </u>	/	
Heavy barge/boat		<b>\$</b> /	
traffic		· V	
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)	<u> </u>		
High winds		<u> </u>	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - (A) No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - (A) No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?

This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?

A. I have no reaction one way or the other.

B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.

  I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.

D. I would be somewhat less likely to visit the Clarksburg Marina.

I would be much less likely to visit the Clarksburg Marina.

- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.

B. I would be much more likely to visit the Hood Supply Company.

C. The construction would not effect the likelihood of me visiting the Hood Supply Company.

D. I would be somewhat less likely to visit the Hood Supply Company. I would be much less likely to visit the Hood Supply Company.

I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times

(E) No

- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.

It is somewhat unlikely that I will use the area.

D. It is very unlikely that I will use the area.

E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Ann J. MADIEAN Address: 280 Sage Marlows DR. Rio Vista, Ca. 94571

Phone: 707-764-6112

Email: ann Madigan @ Cornect. not

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Surve	y taker number.			£
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am wo boatin during Water with n	orking on this project as a g activities in the Delta a g construction of the prop Fix project. Your respon ne to complete our survey	part of my studies. The pund to measure any changes osed Twin Tunnel Project, ses will only be reported in	arpose of this surve in recreation and v sometimes called to aggregate. Can y	the BDCP or California ou take about fifteen minutes
1. D	o vou own a boat or do vo	ou rent a houseboat or othe	r type of boat to go	boating?
Own:	Yes	No	,,	_
Rent:	(Yes)	No		
	to both rent and own th	en end survey.		
2. W	hich best describes your	boat or boats (select all tha	t apply)?	
		`	• • • •	
	. Cabin cruiser			
	Wakeboard boat			
	Ski boat			
	. Runabout			
	Pontoon boat			
F.	House boat			
G	. Day boat			
Н	. Jet Boat			
Ι.	Big Cat			
J.	Performance boat			
1K	🕽 Sail boat			
T.	Kayak/Canoe/Other no	n-motorized boat		
M	. Other:			
A B C D E. F.	. I do not go boating in th		the Delta for recre	ational boating?
	* :			
4. W	hat recreational boating a	activities do you usually un	dertake (select all	that apply)?
(A	) Fishing			
$\widetilde{\mathtt{B}}$	C			
С	. Water Skiing			
(D	Cruising			
Æ	Visiting waterside bars	and restaurants		
F.	Hunting			
G	. Other			

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  B.North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
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9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas  B. Yes, Food and beverages Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) The Point
	2)
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12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
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Long or frequent 5	1	***	
mph speed zones	/		
before reaching fast	<b>√</b>		
water			
Nearby waterside bars	<i>f</i>		
and restaurants	<b>√</b>		
Turbid/muddy water			
Heavy barge/boat			
traffic	<u> </u>		
Excellent			
birdwatching			<u> </u>
Loud noise (traffic,	,		
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

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Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

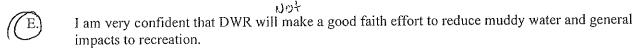
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    - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- I would be very likely to avoid areas where barges create muddy conditions.
- I would be somewhat likely to boat more often in areas where barges create muddy conditions.
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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

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- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
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Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

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- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- (E.) No
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- (E.) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info: or

Name: Robert O. Johnson

Address: 163 Cedar Ridge Dr., Rio Vista, CA

Phone: (707) 374 - 6650

Email: Re rojohnson @ solar insights.com

116
urvey taker number: 01/01 (-15
I, my name is I am a student at the University of California at Santa Cruz. I m working on this project as a part of my studies. The purpose of this survey is to analyze recreational oating activities in the Delta and to measure any changes in recreation and visitation that might occur uring construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California VaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minute with me to complete our survey?
Do you own a boat or do you rent a houseboat or other type of boat to go boating? Own: Yes
ent: Yes No
f No to both rent and own then end survey.
. Which best describes your boat or boats (select all that apply)?
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other: Duer Dock Approximately how many times per year do you visit the Delta for recreational boating? A. I do not go boating in the Delta. B. 1–5 C. 6–10 D. 11–15 E. 15–20 More than 20
If Answer to 3 is A, then end survey.
· -
What recreational boating activities do you usually undertake (select all that apply)?  Fishing  B. Wake boarding  C. Water Skiing  Cruising  Visiting waterside bars and restaurants  F. Hunting  G. Other Turism

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas  B. Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1) Viecos
	Name of Marinas: 1) <b>VICOUS</b> 2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely,	No Change	Less Likely
Excellent fishing			
Long or frequent 5 mph speed zones before reaching fast water			
Nearby waterside bars and restaurants	<b>V</b>		
Turbid/muddy water	V		
Heavy barge/boat traffic	<b>✓</b>		
Excellent birdwatching			
Loud noise (traffic, construction, etc.)			
High winds		-	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.

(C.) I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

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Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
    - Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E) I would be much less likely to visit the Clarksburg area.
  - J am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- (E.) I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. / It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Gayle Crawley
Address: 299 MARKS PRD
RIO VISTA CA 94571
Phone: 707 318 7391
Email: gayle Crawley asbeglobal, Net

Survey	taker number:	07		+-7	
boating during of WaterF with me First, I	activities in the De construction of the p ix project. Your reset to complete our su would like to get so	elta and to measure and proposed Twin Tunn sponses will only be arvey?  The general informat	a student at the University of this surnly changes in recreation and el Project, sometimes called reported in aggregate. Can ion about your recreational oat or other type of boat to	d visitation that might occ d the BDCP or California you take about fifteen mi boating activities.	cur
Rent:  If No to	(es) both rent and ow	No <b>n then end survey.</b>			
2. Wh	ich best describes y	our boat or boats (se	elect all that apply)?		
B. C. D. E. F. G. H. I. J. K. L. M.	Other: Decre	er non-motorized boz EMPloyers f	xxxt		
Α.	I do not go boating		o you visit the Delta for rec	reational boating?	
C.	1–5 6–10 .11–15 15–20 More than 20				
If A	Answer to 3 is A, th	nen end survey.			
A. B. C. D. E. F.	Fishing Wake boarding Water Skiing Cruising	ing activities do you	usually undertake (select a	il that apply)?	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  B North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
N/A	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
1911	
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8. W/K	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A Yes, Gas  Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Viera
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	<b>/</b>		
Long or frequent 5			
mph speed zones	/		
before reaching fast	V		
water			
Nearby waterside bars			/
and restaurants	, , , , , , , , , , , , , , , , , , , ,		V
Turbid/muddy water			
Heavy barge/boat			
traffic	<b>│</b>		
Excellent		<i>f</i>	
birdwatching			
Loud noise (traffic,			
construction, etc.)	/	<u> </u>	
High winds	<b>✓</b>		

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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  - Significant reduction in frequency of boating activity in the Delta overall
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  - A. No change in location of my boating activity.
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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

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- A. This is not a concern for me.

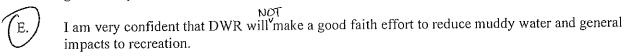
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- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
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  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat
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- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F) I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E.) No.
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info: or

Name: Nicholas

Address:

Phone: 709 843 1485

Email:

Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.  1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?  A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other: Todiac
<ul> <li>Approximately how many times per year do you visit the Delta for recreational boating? <ul> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul> </li> <li>If Answer to 3 is A, then end survey.</li> </ul>
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other Hill</li> </ul>

	5. Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  B) North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area  G) Other
	6. Where do you keep your boat during the summer
Riendy	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat  7. If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
Re X	/
Voca .	<ul> <li>8. Where do you keep your boat in the off season?</li> <li>A. Away from the Delta in a slip in the water</li> <li>B. Away from the Delta in dry storage or at my residence</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
	9. If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
	<ul> <li>10. When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A) Yes, Gas</li> <li>B. Yes, Food and beverages</li> <li>C. Yes, bait or fishing supplies</li> <li>D) Yes, other items</li> <li>E. No</li> </ul>
	11. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Hops
	Name of Marinas: 1) Hops 2) Isleton
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5 mph speed zones before reaching fast water			
Nearby waterside bars and restaurants	<b>/</b> ,		
Turbid/muddy water			
Heavy barge/boat traffic			
Excellent birdwatching			
Loud noise (traffic, construction, etc.)	V /		
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - (C.) Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - I would occasionally avoid the Delta by switching to boat at locations other than the Delta. I would often avoid the Delta by switching to boat at locations other than the Delta.

  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- C. I would be very likely to avoid areas where barges create muddy conditions.
- I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- (E.) I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- (E.) I would be much less likely to visit the Clarksburg area.
- I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
  - I would be much less likely to visit the Clarksburg Marina.
    - I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- (A.) Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: Poport

Address:

Phone:

Email: Surehot\_XXX @ yahoo.com

Survey taker number: 12/13
Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:  3. Approximately how many times per year do you visit the Delta for recreational boating?
A. I do not go boating in the Delta.  B. 1–5
C. 6–10 D. 11–15
E. 15–20 F. More than 20
If Answer to 3 is A, then end survey.
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other</li> </ul>
· · · · · · · · · · · · · · · · · · ·

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
ممر	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages C. Yes, bait or fishing supplies Yes, other items E. No
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1)
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing		<u> </u>	
Long or frequent 5		'\	
mph speed zones		1	
before reaching fast		/	
water			
Nearby waterside bars	1		
and restaurants		A Section 1	
Turbid/muddy water	<u> </u>		
Heavy barge/boat	X		
traffic			
Excellent		\	
birdwatching			
Loud noise (traffic,		4	
construction, etc.)			
High winds		X	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

	2.7
(Yes)	No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

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There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - (E) I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
- C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.

  D I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- Which of the following best describes your reaction to the potential for an increase muddy water 16. along barge routes?
- This is not a concern for me. A.
- I would be somewhat likely to avoid areas where barges create muddy conditions. В.
- I would be very likely to avoid areas where barges create muddy conditions.
- Ĉ) D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- Which of the following best describes your reaction to DWR's intention to implement a barge 17. operations plan?
- I have no reaction one way or the other. A.
- I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and В. general impacts to recreation.
- I am very confident that DWR will make a good faith effort to reduce muddy water and general C. impacts to recreation.
- I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- I am very confident that DWR will make a good faith effort to reduce muddy water and general E. impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
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- (F.) I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- F. I am sure I would not visit the Clarksburg Marina during the construction project.
  - 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
  - A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
- I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name:

Pete Bowes 11 (armen Ct Orinda, A Address:

Phone:

Email:

Survey taker number: 17113 3 -8
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1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own:  No  Rent: Yes  No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?
A. Cabin cruiser  B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:  3. Approximately how many times per year do you visit the Delta for recreational boating?
A. I do not go boating in the Delta.  B. 1–5
C. 6–10 D. 11–15 E. 15–20 F. More than 20
If Answer to 3 is A, then end survey.
4. What recreational boating activities do you usually undertake (select all that apply)?  A Fishing B. Wake boarding C. Water Skiing D. Cruising Visiting waterside bars and restaurants Hunting
G. Other

5.	Which of the following recreational activities (	areas of the Delta best describes the areasincle all that apply)?	s of the Delta that you use for these
	R. North Delta around I C. South Delta around I D. Central Delta around	l Korth's Pirate's Lair, Bethel Island, Frai Walnut Grove, Locke area. Cove area	
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9.	If the answer to 8 is A c	or B, what is the zip code where you keep	your boat during the off season?
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	2)_	-	_
	3)_		

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	1		
Long or frequent 5	-		
mph speed zones	1 1		
before reaching fast			
water			
Nearby waterside bars		Olim Superpart	
and restaurants			
Turbid/muddy water	- Andrew		
Heavy barge/boat	L L	And the state of t	
traffic			
Excellent	,		
birdwatching	<b></b>		
Loud noise (traffic,			
construction, etc.)	\		
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall

    Some reduction in frequency of boating activity in the Delta overall
    - C. Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - (C.) I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.

    E. I would always avoid the Delta by switching to boat at locations other than the Delta.

4

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.

(C) I would be very likely to avoid areas where barges create muddy conditions.

- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - (D) Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
  - The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
  - D I would be somewhat less likely to visit the Hood Supply Company.
  - E. I would be much less likely to visit the Hood Supply Company.
  - F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- (E) No
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
  - D. It is very unlikely that I will use the area.
  - E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info: or

Name: Kody Feliz

Address: 13 Rill Ch

Phone:

Email: Kady 1. feliz@gnail. Com

Survey taker number: 17/13 [3-7]	
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1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.	
2. Which best describes your boat or boats (select all that apply)?	
A Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:	
<ul> <li>3. Approximately how many times per year do you visit the Delta for recreational boating?</li> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> </ul>	
F) More than 20	
If Answer to 3 is A, then end survey.	
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A. Fishing</li> <li>B. Wake boarding</li> <li>Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> </ul>	
G. Other	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?					
	recreational activities (circle all mat apply):					
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area					
	D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area.					
	F. Stockton, Windmill Cove area G. Other GROWING LY LETON					
6.	Where do you keep your boat during the summer					
	<ul><li>A. Away from the Delta in dry storage or at my residence.</li><li>B. Away from the Delta in a slip in the water</li></ul>					
	C. In the Delta in dry storage or at my residence out of the water					
(	D In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat					
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?					
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water					
	<ul><li>B Away from the Delta in dry storage or at my residence</li><li>C. In the Delta in dry storage or at my residence out of the water</li></ul>					
C	Don the Delta in a slip in the water					
	E. I have a home in the Delta with an attached dock where I keep my boat					
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?					
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.					
	(A). Yes, Gas					
	(B). Yes, Food and beverages (C) Yes, bait or fishing supplies					
(	D. Yes, other items					
	E. No					
4°						
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?					
	Name of Marinas: 1) physics residence  2)					
	2)					
	3)					
	2)					

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X		
Long or frequent 5 mph speed zones before reaching fast water		X	
Nearby waterside bars and restaurants	<b>×</b>		
Turbid/muddy water	<u> </u>		
Heavy barge/boat traffic	,	×	
Excellent birdwatching		$\times$	
Loud noise (traffic, construction, etc.)	×		
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

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  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
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    - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
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  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
- C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
- I would often avoid the Delta by switching to boat at locations other than the Delta.
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A.

This is not a concern for me.

I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

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- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- (F:) I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
  Yes more than 20 times
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.

  E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name:

Larry Shaw

Address: 60x# 93 VIOVISTA

Phone:

916-233-9756

Email:

I shaw 1943 @ gmail.com

Survey taker number: 2/13 13-13%	
Hi, my name is I am a student at the University of C am working on this project as a part of my studies. The purpose of this survey boating activities in the Delta and to measure any changes in recreation and vi during construction of the proposed Twin Tunnel Project, sometimes called th WaterFix project. Your responses will only be reported in aggregate. Can yo with me to complete our survey?  First, I would like to get some general information about your recreational boats.	vis to analyze recreational sitation that might occur se BDCP or California utake about fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat to go Own: Yes No	boating?
Rent: Yes No If No to both rent and own then end survey.	To lare lake wost of mississippi
2. Which best describes your boat or boats (select all that apply)?	iggizziezm to tew
<ul> <li>A. Cabin cruiser</li> <li>B. Wakeboard boat</li> <li>C. Ski boat</li> <li>D. Runabout</li> <li>E. Pontoon boat</li> <li>F. House boat</li> <li>G. Day boat</li> <li>H. Jet Boat</li> <li>I. Big Cat</li> <li>J. Performance boat</li> <li>K. Sail boat</li> <li>L. Kayak/Canoe/Other non-motorized boat</li> <li>M. Other:</li> <li>3. Approximately how many times per year do you visit the Delta for recreat</li> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> </ul>	tional boating?
D. 11–15 E. 15–20 F. More than 20	
If Answer to 3 is A, then end survey.	

4. What recreational boating activities do you usually undertake (select all that apply)	?
(A) Fishing	
B. Wake boarding	
C. Water Skiing	
(D) Cruising	
E. Visiting waterside bars and restaurants	
F. Hunting	
G. Other <u>SULVA</u>	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?				
(	B) North Delta aroun C. South Delta aroun D. Central Delta arou				
6.	Where do you keep y	our boat during the summer			
	B. Away from the I C. In the Delta in di D In the Delta in a	relta in dry storage or at my residence. relta in a slip in the water relta with an attached dock where I keep my boat			
7.	If answer to 6 is A or	B, what is the zip code where you keep your boat during summer?			
8.	<ul> <li>Where do you keep your boat in the off season?</li> <li>A. Away from the Delta in a slip in the water</li> <li>B Away from the Delta in dry storage or at my residence</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>				
9.	If the answer to 8 is a	A or B, what is the zip code where you keep your boat during the off season?			
10.	When you visit the Dor other items from IA, Yes, Gas B. Yes, Food and be Yes, bait or fishi D. Yes, other items E. No				
11.	If answer to 10 is A,  Name of Marinas:	B, C, or D, then: Which marina or marinas do you most often make purchases at?  Nous Gov Island			
		,			
	•				
	•	<u> </u>			

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	<b>X</b> )		
Long or frequent 5	,		
mph speed zones	<b>V</b>		
before reaching fast			
water			
Nearby waterside bars	· ·		
and restaurants			
Turbid/muddy water	χ'		
Heavy barge/boat	\ \frac{1}{}		
traffic			
Excellent	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
birdwatching	X		
Loud noise (traffic,			
construction, etc.)	<u> </u>		
High winds	<i>X</i>		

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - Significant reduction in frequency of boating activity in the Delta overall
    - D. Increase in frequency of boating activity in the Delta overall.
    - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - (E) I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- D. I would be somewhat less likely to visit the Clarksburg Marina.
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  - A. I would be somewhat more likely to visit the Hood Supply Company.
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- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E) No
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
  - D. It is very unlikely that I will use the area.
  - E. I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: J-M. McColly Address: 106 Hilloica DM. VARWille 95688

Phone:

707-718-4598 Mewlygunne Aol-com Email:

Survey	taker number:	16	(lo -	-3
boating a during co WaterFiz with me	activities in the D onstruction of the x project. Your re to complete our s	elta and to measure any cl proposed Twin Tunnel P esponses will only be repo	hanges in recreation and roject, sometimes called orted in aggregate. Can	you take about fifteen minutes
Own: TRent: Y	Y <u>e</u> s Yes	do you rent a houseboat o No No wn then end survey.	or other type of boat to	go boating?
2. Whi	ch best describes	your boat or boats (select	all that apply)?	
B. C. S. C.	Other: Jet 5	ner non-motorized boåt L' nany times per year do yo	u visit the Delta for rec	reational boating?
E.	15–20			
	More than 20  nswer to 3 is A, 1	hen end survey.		
A. 1 B <sub>3</sub> O D. 0 E. 1 F. 1	Fishing Wake boarding Water Skiing Cruising	e bars and restaurants	ally undertake (select a	ll that apply)?

Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
A) West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
Where do you keep your boat during the summer
<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E) I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  I have a home in the Delta with an attached dock where I keep my boat
If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A) Yes, Gas  B. Yes, Food and beverages  C. Yes, bait or fishing supplies  D. Yes, other items  E. No
If answer to 10 is A, B. C, or D, then: Which marina or marinas do you most often make purchases at?
Name of Marinas: 1)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
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Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			X
Heavy barge/boat			
traffic			
Excellent		<b>\</b>	
birdwatching		A	
Loud noise (traffic,			
construction, etc.)			
High winds			<u> </u>

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

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- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



Æ

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  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
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- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- Yes more than 20 times
  No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: John Marques

Address: 34 Wostbook CT

Clayfon, OA 94517

Phone: (925) 325-3685

Email: Marquege live. Com.

Survey taker number:	6	16-12
boating activities in the Delta a during construction of the prop WaterFix project. Your respon with me to complete our survey	a part of my studies. The purpose of this and to measure any changes in recreation posed Twin Tunnel Project, sometimes c ases will only be reported in aggregate.	n and visitation that might occur called the BDCP or California Can you take about fifteen minutes
1. Do you own a boat or do yo Own: Ves Rent: Yes If No to both rent and own th	ou rent a houseboat or other type of boa No	t to go boating?
2. Which best describes your	boat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other no	on-motorized boat times per year do you visit the Delta for	recreational boating?
A. I do not go boating in the B. 1–5 6 6–10 D. 11–15 E. 15–20 F. More than 20		recreational boating:
If Answer to 3 is A, then e	end survey.	
4. What recreational boating a Fishing B. Wake boarding C. Water Skiing D. Cruising E. Visiting waterside bars F. Hunting	activities do you usually undertake (selec and restaurants	ct all that apply)?
G. Other		

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water D. In the Delta in a slip in the water E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	<ul> <li>When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A. Yes, Gas</li> <li>B. Yes, Food and beverages</li> <li>C. Yes, bait or fishing supplies</li> <li>D. Yes, other items</li> <li>E. No</li> </ul>
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Sandy Black  2) Sugar burge  3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely,	No Change	Less Likely
Excellent fishing	<b>X</b>		
Long or frequent 5			
mph speed zones		_ /	
before reaching fast			
water			
Nearby waterside bars			
and restaurants			X
Turbid/muddy water		/	<b>X</b>
Heavy barge/boat	,	~/	
traffic			
Excellent		~/	
birdwatching		<u> </u>	
Loud noise (traffic,			
construction, etc.)			
High winds	;		

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - (S) Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- The Clarksburg Marina is located across the river and a little over a quarter of a mile from the 20. intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- I would be somewhat more likely to visit the Clarksburg Marina. A.
- I would be much more likely to visit the Clarksburg Marina. В.
- The construction would not effect the likelihood of me visiting the Clarksburg Marina. C.
- I would be somewhat less likely to visit the Clarksburg Marina. D.
- I would be much less likely to visit the Clarksburg Marina. E.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
- The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy 21. construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- I would be much more likely to visit the Hood Supply Company. В.
- The construction would not effect the likelihood of me visiting the Hood Supply Company. C.
- I would be somewhat less likely to visit the Hood Supply Company. D.
- I would be much less likely to visit the Hood Supply Company. E.
- $\langle \hat{\mathbf{F}} \rangle$ I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so 22. how often?
- Yes 1–5 times.
- Yes 6–10 times
  - Yes 11–20 times
- Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows 23. Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- It is somewhat likely that I will use the area. A.
- It is very likely that I will use the area. В.
- It is somewhat unlikely that I will use the area. C.
- It is very unlikely that I will use the area. D.
- I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: SAL BUSALARCKI

Address: 2154 MASON St

Phone: (415) 999-9019

Salo spamarrest. com

Survey taker number: 09	9-3
am working on this project as a part of my studies. boating activities in the Delta and to measure any during construction of the proposed Twin Tunnel I	orted in aggregate. Can you take about fifteen minutes
1. Do you own a boat or do you rent a houseboat Own: Yes No Rent: Yes No If No to both rent and own then end survey.	or other type of boat to go boating?
2. Which best describes your boat or boats (selec	t all that apply)?
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:	
3. Approximately how many times per year do you also not go boating in the Delta.  B. 1-5 C. 6-10 D. 11-15 E. 15-20 F. More than 20	nu visit the Delta for recreational boating?
If Answer to 3 is A, then end survey.	
4. What recreational boating activities do you usu A. Fishing B. Wake boarding C. Water Skiing D. Cruising E. Visiting waterside bars and restaurants F. Hunting Other Wivnm	ally undertake (select all that apply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
/	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
/	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water  In the Delta in dry storage or at my residence out of the water  In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas  Yes, Food and beverages  Yes, bait or fishing supplies  Yes, other items  E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Sandy Beach 2) Proate's Leer
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	7		
Long or frequent 5			
mph speed zones	X		
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			X'
Heavy barge/boat			/
traffic			
Excellent		<b>✓</b>	
birdwatching			
Loud noise (traffic,			$\sim$
construction, etc.)			<b>/</b> \
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B I would be somewhat likely to avoid areas where barges create muddy conditions.
I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat
- E.) Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- Once construction of the intakes begins in the Clarksburg area, which best describes your 19. response?
- I would be somewhat more likely to visit the Clarksburg area. A.
- I would be much more likely to visit the Clarksburg area. В.
- The construction would not affect the likelihood of me visiting the Clarksburg area. C.
  - I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- I would be somewhat less likely to visit the Clarksburg Marina.

  I would be much less likely to visit the Clarksburg Marina.
- I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
  - I would be somewhat less likely to visit the Hood Supply Company.
  - I would be much less likely to visit the Hood Supply Company.
    - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?



Yes 1–5 times.

- Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: Phillip Aguirre

Address: 3807 650000

Phone: 209-5544166

Email: CAlfashion & & yahoo.

Survey taker number: 8
Hi, my name is I am a student at the University of California at Santa Cruz. I am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minut with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.
2. Which best describes your boat or boats (select all that apply)?  A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:
<ul> <li>3. Approximately how many times per year do you visit the Delta for recreational boating? <ul> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul> </li> <li>If Answer to 3 is A, then end survey.</li> </ul>
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other</li> </ul>

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	West Delta around Antioch Suisun Marsh area  B North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area C Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area C Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  Away from the Delta in a slip in the water  Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?  96640 I FISH YEAR ROUND
	<ul> <li>When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A. Yes, Gas</li> <li>B) Yes, Food and beverages</li> <li>C) Yes, bait or fishing supplies</li> <li>D. Yes, other items</li> <li>E. No</li> </ul>
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) BP W
	Name of Marinas: 1) BPW  2) VIRRAYS
	3) WIMPY 15

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X		
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)		<u> </u>	
High winds			<u> </u>

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B) I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

B. I would be somewhat likely to avoid areas where barges create muddy conditions.
I would be very likely to avoid areas where barges create muddy conditions.

D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.

E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
  - E. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
  - I would be much less likely to visit the Clarksburg Marina.
  - I am sure I would not visit the Clarksburg Marina during the construction project.
- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.

E.

- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: BRUCE GRIFFITH

Address: 4077 ZUMI CT LONE, CA. 95640

Phone: 209 304 - 9446

Email: BAGRIFFY @GMAILICOM

Survey taker number:	8-12
Hi, my name is I am a student at the University am working on this project as a part of my studies. The purpose of this is boating activities in the Delta and to measure any changes in recreation a during construction of the proposed Twin Tunnel Project, sometimes cal WaterFix project. Your responses will only be reported in aggregate. C with me to complete our survey?  First, I would like to get some general information about your recreation.	survey is to analyze recreational and visitation that might occur led the BDCP or California an you take about fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat to Own:  No Rent: Yes  No If No to both rent and own then end survey.	to go boating?
2. Which best describes your boat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:	
<ul> <li>3. Approximately how many times per year do you visit the Delta for reA. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>	ecreational boating?
If Answer to 3 is A, then end survey.	
•	
<ul> <li>4. What recreational boating activities do you usually undertake (select A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other Lives Ow Boat</li> </ul>	tall that apply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other The Latence
6.	Where do you keep your boat during the summer
,	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?  10+ Willing to Share
	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  Yes, Gas Yes, Food and beverages Yes, bait or fishing supplies Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas:  1) CHHOVE  2) Draws Boat Hwtot  3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	-Less Likely
Excellent fishing	, X		
Long or frequent 5			
mph speed zones	4.2		
before reaching fast	X		
water			
Nearby waterside bars	X		
and restaurants			<u> </u>
Turbid/muddy water	<u> </u>		
Heavy barge/boat	V		
traffic			
Excellent		$\vee$	
birdwatching			
Loud noise (traffic,		×	
construction, etc.)			
High winds		<u> </u>	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

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There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D\ I would often avoid the Delta by switching to boat at locations other than the Delta.
    - I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

2-12 2-12 2-2-2-1

- B. I would be somewhat likely to avoid areas where barges create muddy conditions.
- I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- E. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
    - Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
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- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
  - I would be much less likely to visit the Clarksburg area.
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- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
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- 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
- A. I would be somewhat more likely to visit the Hood Supply Company.
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- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- It is very unlikely that I will use the area.
  - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name:

Address: Po. Bo

Phone:

. Email:

Survey taker number:		5-1	
boating activities in the Deliduring construction of the p WaterFix project. Your resp with me to complete our sur First, I would like to get son  1. Do you own a boat or do Own: Yes	ta and to measure any cheroposed Twin Tunnel Proposed Twin Tunnel Proposes will only be reposey?  The general information and you rent a houseboat on No	nanges in recreation roject, sometimes orted in aggregate.  about your recreation	_
Rent: Yes  If No to both rent and own	No then end survey.		
2. Which best describes yo	•	all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other M. Other:	non-motorized boat		
<ul> <li>Approximately how man A. I do not go boating in B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>		u visit the Delta fo	r recreational boating?
If Answer to 3 is A, the	en end survey.		
4. What recreational boating Fishing B Wake boarding C Water Skiing C Cruising E. Visiting waterside b F. Hunting G. Other		ılly undertake (sel	ect all that apply)?

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water D. In the Delta in a slip in the water E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) The point  2) (10 US w
	3) Delta Loop

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5 mph speed zones before reaching fast water			
Nearby waterside bars and restaurants			
Turbid/muddy water			
Heavy barge/boat traffic			
Excellent birdwatching		1	
Loud noise (traffic, construction, etc.)		. •	
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

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There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - Be Some reduction in frequency of boating activity in the Delta overall C Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.

court avoid the

- E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B.) I would be somewhat likely to avoid areas where barges create muddy conditions.
- C. I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

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- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
  - I would be somewhat less likely to visit the Clarksburg area.
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    - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.

(E)

I would be somewhat less likely to visit the Clarksburg Marina. I would be much less likely to visit the Clarksburg Marina.

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Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?



Yes 1–5 times.

- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.

It is somewhat unlikely that I will use the area.

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I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Address:

Email:

Survey taker number:	- 5-3
boating activities in the Delta and to mea during construction of the proposed Twi WaterFix project. Your responses will o with me to complete our survey?	. I am a student at the University of California at Santa Cruz. In studies. The purpose of this survey is to analyze recreational asure any changes in recreation and visitation that might occur in Tunnel Project, sometimes called the BDCP or California only be reported in aggregate. Can you take about fifteen minutes formation about your recreational boating activities.
1. Do you own a boat or do you rent a l Own: Yes No Rent: Yes No If No to both rent and own then end su	houseboat or other type of boat to go boating?
2. Which best describes your boat or bo	pats (select all that apply)?
A. Cabin cruiser B. Wakeboard boat C. Ski boat D Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motoriz M. Other:	zed boat
<ul> <li>3. Approximately how many times per A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>	year do you visit the Delta for recreational boating?
If Answer to 3 is A, then end surve	y.
<ul> <li>4. What recreational boating activities of A. Fishing</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restate.</li> <li>F. Hunting</li> <li>G. Other</li> </ul>	do you usually undertake (select all that apply)? urants

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
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6.	Where do you keep your boat during the summer
(	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water D. In the Delta in a slip in the water E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
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(	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A: Yes, Gas  B: Yes, Food and beverages  C: Yes, bait or fishing supplies  D. Yes, other items  E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Vieras marina
	2) Byw resort
	3) Snug harbor Tower park
	Tower park

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X		
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water		X	
Heavy barge/boat		4	× AX
traffic			/ PQ
Excellent		1	
birdwatching		<u> </u>	
Loud noise (traffic,			
construction, etc.)			
High winds	<u> </u>		

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

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- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- E.

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- F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

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- D. I would be somewhat less likely to visit the Clarksburg area.
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- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
  Yes more than 20 times
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
  - D. It is very unlikely that I will use the area.
    - I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Ken Richan DSON

Address: P.O.BOX 866 IONE CALF. 95642

Phone: 1-209-781-6998

Email:

Survey taker number:	5		5-11	
boating activities in the Delt during construction of the pa WaterFix project. Your resp with me to complete our sur First, I would like to get son 1. Do you own a boat or do	ta and to measure ar roposed Twin Tunno ponses will only be vey? ne general informati o you rent a housebo	a student at the University of Ges. The purpose of this surve by changes in recreation and vel Project, sometimes called the reported in aggregate. Can your about your recreational both part or other type of boat to go	isitation that mine BDCP or Calou take about fif	ight occur lifornia Iteen minutes
Own: Yes) Rent: Yes	No No			
If No to both rent and own				
2. Which best describes yo	•	lect all that apply)?		
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other M. Other:	_	t o you visit the Delta for recrea	tional boating?	
A. I do not go boating in B. 1–5 C. 6–10 D. 11–15 E. 15–20 F. More than 20		you visit the Delta for recrea	tronar boating:	
If Answer to 3 is A, the	en end survey.			
4. What recreational boating A. Pishing B. Wake boarding C. Water Skiing D. Cruising E. Visiting waterside b F. Hunting G. Other		usually undertake (select all ti	nat apply)?	

5.	recreational activities (circle all that apply)?
(	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	A. Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water D. In the Delta in a slip in the water E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?  Dict not who want to answer
<	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B.) Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?  Dick not want to answer
5	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas  B. Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11,	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) The point
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X'		
Long or frequent 5	,		
mph speed zones			
before reaching fast		X	
water			
Nearby waterside bars		V	
and restaurants			
Turbid/muddy water	X		
Heavy barge/boat	$\vee$		
traffic			
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)	. /		
High winds	<u> </u>		

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E.) I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
- D. I would often avoid the Delta by switching to boat at locations other than the Delta.

  E.) I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B.) I would be somewhat likely to avoid areas where barges create muddy conditions.
  - I would be very likely to avoid areas where barges create muddy conditions.
  - D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
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To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
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- A Yes 1–5 times.
- B. Yes 6–10 times
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- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - ). \_ It is very unlikely that I will use the area.
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Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

or

Name: P. Bosome Die Vista Address: 135 Sequence Die Vista Phone: 707-386-0667 Email: PAPA, BOSOURC Yellerd. Com

Hi, my name is I am a student at the University of California a am working on this project as a part of my studies. The purpose of this survey is to analyboating activities in the Delta and to measure any changes in recreation and visitation the during construction of the proposed Twin Tunnel Project, sometimes called the BDCP of WaterFix project. Your responses will only be reported in aggregate. Can you take about with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.	yze recreational at might occur or California out fifteen minutes
1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: Yes No  Rent: Yes No  If No to both rent and own then end survey.	
2. Which best describes your boat or boats (select all that apply)?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other: Yacht	
<ul> <li>3. Approximately how many times per year do you visit the Delta for recreational boats.</li> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>	ting?
If Answer to 3 is A, then end survey.	
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>A) Fishing</li> <li>B) Wake boarding</li> <li>C. Water Skiing</li> <li>D) Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other</li> </ul>	

5.	which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?  — Did net want to answer
	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
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	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A? Yes, Gas  P. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) RIO UISTA MOVENCE 2) VIEWAS RESORT
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X7		
Long or frequent 5			
mph speed zones	<b>→</b>		
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water	<u> </u>		
Heavy barge/boat	-√		
traffic	/\		
Excellent			
birdwatching			
Loud noise (traffic,			
construction, etc.)		$\wedge$	
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



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The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

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- $(\widehat{C})$  I would be very likely to avoid areas where barges create muddy conditions.
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Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

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- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - (F.) Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

To build the in-water portion of these structures, barge-mounted pile drivers will drive foundation piles into the river bottom. There will be about 8,000 piles in all. The pile driving will take place each summer for six years. Four or more pile drivers will be working at the same time. Each time a pile driver strikes a pile, it will produce a sound of 102 decibels or more. 100 decibels is about as loud as your car stereo turned up to full volume. There will be a total of 8,000,000 individual pile strikes.

- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- (F.) I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
- (F.) I am sure I would not visit the Clarksburg Marina during the construction project.
  - 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
  - A. I would be somewhat more likely to visit the Hood Supply Company.
  - B. I would be much more likely to visit the Hood Supply Company.
  - C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
  - D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
- F.j I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C.) Yes 11–20 times
  - D. Yes more than 20 times
  - E. No.
  - Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
  - A. It is somewhat likely that I will use the area.
  - B. It is very likely that I will use the area.
  - C. It is somewhat unlikely that I will use the area.
- D., It is very unlikely that I will use the area.
- E.) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Franklin Structura &

Address: PO Box 748

Walnut Crove da 95696

Phone: 916 270 5106

Email: iweldife hotmail.com.

Survey taker number:	5		5	15
Hi, my name isam working on this project boating activities in the Del during construction of the p WaterFix project. Your res with me to complete our sur First, I would like to get sor	ta and to measure a roposed Twin Tun ponses will only be vey?	iny changes in recreation and nel Project, sometimes call- reported in aggregate. Ca	nd visitation the dathe BDCP in you take ab	hat might occur or California out fifteen minutes
Own: Yes  Rent: Yes  If No to both rent and own  1. Do you own a boat or d  Own: Yes  Rent: Yes	No No		go boating?	
A. Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other M. Other:	· non-motorized bo			
3. Approximately how ma A. I do not go boating in B. 1–5 C. 6–10 D. 11–15 E. 15–20 F. More than 20  If Answer to 3 is A, the	n the Delta.	o you visit the Delta for re	creational boa	ating?
4. What recreational boating A. Fishing B. Wake boarding C. Water Skiing D. Cruising E. Visiting waterside boarding F. Hunting G. Other		usually undertake (select a	all that apply)	?

Э.	recreational activities (circle all that apply)?
,	A. West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area  G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  The Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas B. Yes, Food and beverages C. Yes, bait or fishing supplies D. Yes, other items E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Delta Mavine
	2) windmill cove
	3) Garlie mariaa
	old foun sacramento

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing	X		
Long or frequent 5			/
mph speed zones			X
before reaching fast			,
water			
Nearby waterside bars	$\times$		
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent			
birdwatching	^		
Loud noise (traffic,			
construction, etc.)			
High winds	•	$\perp$	

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes No

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall
  - C. Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E.) I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E.) I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- B) I would be somewhat likely to avoid areas where barges create muddy conditions.
- C. I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.
- E. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

To facilitate tunnel construction, there will be a new concrete batch plant, excavated material site, and other construction related facilities on Bouldin Island. A new road will be built to connect the construction facility to Highway 12 midway between the Terminous Bridge and the bridge at the B & W Resort. Construction trucks will travel on Highway 12 and turn onto the new road to reach the Bouldin Island construction area. The new turnout on Highway 12 and new road are shown here on this map.

It is estimated that there will be 41% more traffic crossing the Rio Vista Bridge over the Sacramento River during the construction period because of truck and car trips generated by the tunnel project.

The barges and tug boats used for tunnel construction will pass beneath 2 drawbridges on State Highway 12 (here and here) and beneath other Delta drawbridges. Each time a barge passes, the drawbridges will be opened and road traffic will be stopped until the barge clears.

Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less
  - F) Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
- C. The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
  - I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
- A. I would be somewhat more likely to visit the Clarksburg Marina.
- B. I would be much more likely to visit the Clarksburg Marina.
- C. The construction would not effect the likelihood of me visiting the Clarksburg Marina.
- D. I would be somewhat less likely to visit the Clarksburg Marina.
- E. I would be much less likely to visit the Clarksburg Marina.
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  - 21. The Hood Supply Company is a bar and grill located next to the intake construction site. Heavy construction trucks and equipment will pass within 100 feet of the restaurant. The Hood Supply Company has both indoor and outdoor seating. Which of the following best describes your response with regard to the Hood Supply Company once intake construction begins?
  - A. I would be somewhat more likely to visit the Hood Supply Company.
- B. I would be much more likely to visit the Hood Supply Company.
- C. The construction would not effect the likelihood of me visiting the Hood Supply Company.
- D. I would be somewhat less likely to visit the Hood Supply Company.
- E. I would be much less likely to visit the Hood Supply Company.
  - I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- Yes 11–20 times
- D. Yes more than 20 times
- E. No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D.\_ It is very unlikely that I will use the area.
- (E.) I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Bill Scebent

Address: 18/37 14mg 160

Rio Vista Calif 9457/

Phone: 408 439 4862

Email:

Survey taker number: 06 15	612
Hi, my name is  I am a student at the University of California at Santa am working on this project as a part of my studies. The purpose of this survey is to analyze recomposed and to measure any changes in recreation and visitation that might during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California at Santa and working activities in the Delta and to measure any changes in recreation and visitation that might during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California at Santa and working activities and unique to construct a project. Your responses will only be reported in aggregate. Can you take about fifted with me to complete our survey?  First, I would like to get some general information about your recreational boating activities.  1. Do you own a boat or do you rent a houseboat or other type of boat to go boating?  Own: No	reational at occur ornia
Rent: Yes No If No to both rent and own then end survey.	
2. Which best describes your boat or boats (select all that apply)?	
A) Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other:	
<ul> <li>3. Approximately how many times per year do you visit the Delta for recreational boating?</li> <li>A. I do not go boating in the Delta.</li> <li>B. 1-5</li> <li>C. 6-10</li> <li>D. 11-15</li> <li>E. 15-20</li> <li>F. More than 20</li> </ul>	
If Answer to 3 is A, then end survey.	
<ul> <li>4. What recreational boating activities do you usually undertake (select all that apply)?</li> <li>B. Wake boarding</li> <li>C. Water Skiing</li> <li>D. Cruising</li> <li>E. Visiting waterside bars and restaurants</li> <li>F. Hunting</li> <li>G. Other</li> </ul>	

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
	A. West Delta around Antioch Suisun Marsh area B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area C. South Delta around Discovery Bay area D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area E. Clarksburg, Hood, Walnut Grove, Locke area. F. Stockton, Windmill Cove area G. Other
6.	Where do you keep your boat during the summer
(	<ul> <li>A. Away from the Delta in dry storage or at my residence.</li> <li>B. Away from the Delta in a slip in the water</li> <li>C. In the Delta in dry storage or at my residence out of the water</li> <li>D. In the Delta in a slip in the water</li> <li>E. I have a home in the Delta with an attached dock where I keep my boat</li> </ul>
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8. 9.	Where do you keep your boat in the off season?  A. Away from the Delta in a slip in the water  B. Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  I have a home in the Delta with an attached dock where I keep my boat  If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10.	When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.  A. Yes, Gas  B. Yes, Food and beverages  Yes, bait or fishing supplies  D. Yes, other items  E. No
11.	If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?  Name of Marinas: 1)
	2)
	3)

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5			
mph speed zones			
before reaching fast			
water			
Nearby waterside bars			
and restaurants			
Turbid/muddy water			
Heavy barge/boat			
traffic			
Excellent	The state of the s		
birdwatching			
Loud noise (traffic,			
construction, etc.)			
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?



This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall Significant reduction in frequency of boating activity in the Delta overall D. Increase in frequency of boating activity in the Delta overall.

  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - By I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - C. I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat at locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.

I would be somewhat likely to avoid areas where barges create muddy conditions.

I would be very likely to avoid areas where barges create muddy conditions.

I would be somewhat likely to boat more often in areas where barges create muddy conditions.

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DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.

I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

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Construction trucks will also use other roadways in various locations throughout the Delta.

- 18. Which of the following best describes your response to construction vehicles using Delta roadways and bridge openings for barge traffic?
  - A. Construction vehicles and bridge openings will not affect my use of the Delta for recreation.
  - B. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat more often.
  - C. Construction vehicles and bridge openings will cause me to use the Delta for recreation much more often.
  - D. Construction vehicles and bridge openings will cause me to use the Delta for recreation somewhat less often.
  - E. Construction vehicles and bridge openings will cause me to use the Delta for recreation much less often.
  - F. Construction vehicles and bridge openings will cause me to stop using the Delta for recreation altogether.

Thank you. I have two questions about how tunnel construction activity might affect your likelihood of visiting the Hood and Clarksburg area. The three intakes that will divert water from the Sacramento River into the tunnels will be built in this area.

This is a map showing construction of the three intakes, which will be located along a six mile stretch of the Sacramento River between Freeport and Courtland. These intake structures are each about 3/4 of a mile long. To build each intake structure, highway 160 will be moved inland away from the river to allow room for the structure, the area will be excavated, and concrete structures will be built. Construction equipment in use will include dump trucks, excavators, bulldozers, and rock drills. Explosive blasting may be used at excavation sites. Helicopter over-flights would occur in connection with installation of new power lines at this area.

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- 19. Once construction of the intakes begins in the Clarksburg area, which best describes your response?
- A. I would be somewhat more likely to visit the Clarksburg area.
- B. I would be much more likely to visit the Clarksburg area.
  - The construction would not affect the likelihood of me visiting the Clarksburg area.
- D. I would be somewhat less likely to visit the Clarksburg area.
- E. I would be much less likely to visit the Clarksburg area.
- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

- 20. The Clarksburg Marina is located across the river and a little over a quarter of a mile from the intake construction site, in view of the pile-driving activities. The Clarksburg Marina is here on the map. Which of the following best describes your response with regard to the Clarksburg Marina once intake construction begins?
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- E. I would be much less likely to visit the Hood Supply Company.
- F. I am sure I would not visit the Hood Supply Company during the construction project.

Thank you. I have two final questions about how tunnel construction activities might affect your likelihood of visiting the Meadows Slough / Upper Snodgrass Slough anchorage area. The Meadows Slough is shown here on the map. Construction activities and barge routes near the Meadows Slough are also shown on the map.

- 22. Have you ever visited the Meadows Slough / Upper Snodgrass Slough anchorage area, and if so how often?
- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times

) No.

Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?

- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
- D. It is very unlikely that I will use the area.

I am sure that I will not use the area once tunnel construction begins.

Would it be ok if I get your contact information in case I need to contact you to do a follow up survey if there are changes to the proposed project later?

Prefer not to give contact info:

Name: Corey Johnson

Address: 7280 Woolner ALC

Phone: 707-639-7949 Email: Cory/4c@hotmil.com

Survey taker number: . I am a student at the University of California at Santa Cruz. I Hi, my name is am working on this project as a part of my studies. The purpose of this survey is to analyze recreational boating activities in the Delta and to measure any changes in recreation and visitation that might occur during construction of the proposed Twin Tunnel Project, sometimes called the BDCP or California WaterFix project. Your responses will only be reported in aggregate. Can you take about fifteen minutes with me to complete our survey? First, I would like to get some general information about your recreational boating activities. 1. Do you own a boat or do you rent a houseboat or other type of boat to go boating? No Own: (Yes) Rent: No If No to both rent and own then end survey. 2. Which best describes your boat or boats (select all that apply)? Cabin cruiser B. Wakeboard boat C. Ski boat D. Runabout E. Pontoon boat F. House boat G. Day boat H. Jet Boat I. Big Cat J. Performance boat K. Sail boat L. Kayak/Canoe/Other non-motorized boat M. Other: 3. Approximately how many times per year do you visit the Delta for recreational boating? A. I do not go boating in the Delta. 1-5 6-10 Ď. 11–15 E. 15-20 F. More than 20 If Answer to 3 is A, then end survey. 4. What recreational boating activities do you usually undertake (select all that apply)? Fishing B. Wake boarding Water Skiing

Cruising

Hunting
G. Other

E.\Visiting waterside bars and restaurants

5.	Which of the following areas of the Delta best describes the areas of the Delta that you use for these recreational activities (circle all that apply)?
(	West Delta around Antioch Suisun Marsh area  B. North Delta around Rio Vista, Walnut Grove, Steamboat Slough area  C. South Delta around Discovery Bay area  D. Central Delta around Korth's Pirate's Lair, Bethel Island, Franks Tract area  E. Clarksburg, Hood, Walnut Grove, Locke area.  F. Stockton, Windmill Cove area  G. Other
6.	Where do you keep your boat during the summer
(	Away from the Delta in dry storage or at my residence.  B. Away from the Delta in a slip in the water C. In the Delta in dry storage or at my residence out of the water D. In the Delta in a slip in the water E. I have a home in the Delta with an attached dock where I keep my boat
7.	If answer to 6 is A or B, what is the zip code where you keep your boat during summer?
8.	Where do you keep your boat in the off season?  A) Away from the Delta in a slip in the water  B Away from the Delta in dry storage or at my residence  C. In the Delta in dry storage or at my residence out of the water  D. In the Delta in a slip in the water  E. I have a home in the Delta with an attached dock where I keep my boat
9.	If the answer to 8 is A or B, what is the zip code where you keep your boat during the off season?
10	<ul> <li>When you visit the Delta, do you make purchases of gas, food and beverages, bait or fishing supplies, or other items from Delta marinas? Circle all that apply.</li> <li>A. Yes, Gas</li> <li>B. Yes, Food and beverages</li> <li>C. Yes, bait or fishing supplies</li> <li>D. Yes, other items</li> <li>E. No</li> </ul>
11	. If answer to 10 is A, B, C, or D, then: Which marina or marinas do you most often make purchases at?
	Name of Marinas: 1) Pritsburgh  2) Vamily  3) Suisun
	2) Vaminer
	3) ZUIZUN

12. In the table below is a list of conditions that you might encounter on different sloughs while boating. For each of these conditions, please indicate how they would affect the likelihood that you would do your recreational boating on those sloughs.

Condition	More Likely	No Change	Less Likely
Excellent fishing			
Long or frequent 5 mph speed zones			
before reaching fast water			
Nearby waterside bars	and the second second		
and restaurants	Carrier Carrie		
Turbid/muddy water			
Heavy barge/boat		***************************************	
traffic	•		
Excellent			the second secon
birdwatching			* = * p * p * * * * * * * * * * * * * *
Loud noise (traffic,	and the second		
construction, etc.)	<u></u>		
High winds			

13. Have you heard about the plan to construct tunnels on the Sacramento River to divert water to the Central Valley farms and Southern California cities?

Yes

This map shows the tunnel construction project. The plan is to build three new intakes to divert water from the Sacramento River near the town of Hood, just downstream from Sacramento. The water diverted at Hood will be conveyed through twin forty foot diameter tunnels buried 150 feet underground beneath Delta islands and sloughs. The water will then be sent south to irrigate Central Valley farms and supply Southern California cities.

This map shows the route the tunnels will take. This is a picture of a tunnel boring machine similar to ones that will be used on the project. Shafts will be excavated down to the tunnels to supply the tunnel boring operations and barges will carry materials, supplies and equipment to be lowered down the shafts.

The tunnel boring machines will produce about 30,000,000 cubic yards of excavated material. The excavated material will be a combination of mud, peat soil, and liquids used to lubricate the cutting heads of the boring machine. A dump truck like the one in this picture holds about 12 cubic yards so that is equal to about two and half million truck loads of excavated material. The excavated material will be hauled up the shafts and loaded onto barges. The barges will then take the material to deposit sites on Delta Islands. This map shows the location of eight new barge landings that will be constructed and the locations where the excavated materials will be deposited. This is a picture of a tugboat and barge similar to the ones that will be used on the tunnel project. The map also shows the routes that barges will take to deliver materials and equipment and to haul away excavated tunnel material.

The California Department of Water Resources produced an Environmental Impact Report (EIR) on the tunnel project. The EIR considered the impacts of the project on recreation and concluded as follows:

"Construction of ... intakes and water conveyance facilities would result in disruption to recreational opportunities. Indirect effects on recreation experiences may occur as a result of impaired access, construction noise, or negative visual effects associated with construction. Overall, construction and geotechnical exploration may occur year-round and last from 2.5 to 13.5 years at individual construction sites near recreation sites or areas and in-river construction would be primarily limited to June 1 through October 31 each year, which would result in a long-term reduction of recreational opportunities or experiences."

There will also be two drilling barges that will drill into the river bottom to test the soil conditions along the tunnel route. The drilling will occur at between 90 and 100 sites on Delta waterways. Overwater drilling will occur 6 days per week in the summer and fall months for about three years. This is a map that shows the locations of the drilling, both on land and in the water.

The use of barges for water facilities construction, overwater drilling, and construction of the temporary barge unloading facilities may require partial channel closures and will require use of equipment within the waterways. Temporary in-water construction zone restrictions would be put in place around barges and barge facilities, including 5-mph speed-restricted zones extending upstream and downstream of construction within the waterway and extending upstream and downstream of barge facilities to reduce wake and maintain a safe work area in the vicinity of the construction activities.

Within the speed-restricted zones high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated.

- 14. Once the tunnel construction project begins, which of the following best describes the likely change in the frequency of your boating activity in the Delta overall in response to the construction described above?
  - A. No change in frequency of boating activity in the Delta overall
  - B. Some reduction in frequency of boating activity in the Delta overall Significant reduction in frequency of boating activity in the Delta overall
  - D. Increase in frequency of boating activity in the Delta overall.
  - E. I will stop boating in the Delta altogether.
- 15. Once tunnel construction begins, which of the following best describes the likely change in the location of your boating activity?
  - A. No change in location of my boating activity.
  - B. I would change the location of my boating within the Delta to avoid construction activity but would not switch to boat at locations other than the Delta.
  - ? I would occasionally avoid the Delta by switching to boat at locations other than the Delta.
  - D. I would often avoid the Delta by switching to boat-at-locations other than the Delta.
  - E. I would always avoid the Delta by switching to boat at locations other than the Delta.

The tug boats that will be used to push barges for this project have the potential for bottom scour from propeller wash. This may cause an increase in muddy water along the barge routes.

- 16. Which of the following best describes your reaction to the potential for an increase muddy water along barge routes?
- A. This is not a concern for me.
- (B) I would be somewhat likely to avoid areas where barges create muddy conditions.
- C. I would be very likely to avoid areas where barges create muddy conditions.
- D. I would be somewhat likely to boat more often in areas where barges create muddy conditions.
- E. I would be very likely to boat more often in areas where barges create muddy conditions.

DWR says that they will implement a barge operations plan and use their best efforts to reduce or avoid any increases in muddy water from barge operations and to reduce or avoid barge impacts to recreation in general.

- 17. Which of the following best describes your reaction to DWR's intention to implement a barge operations plan?
- A. I have no reaction one way or the other.
- B. I am somewhat confidence that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- C. I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.
- D. I somewhat confident that DWR will not make a good faith effort to reduce muddy water and general impacts to recreation.



I am very confident that DWR will make a good faith effort to reduce muddy water and general impacts to recreation.

Thank you for those responses. Now have a question about whether the tunnel construction activities that will take place on land might affect your boating activities.

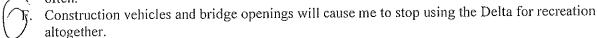
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- F. I am sure that I would not visit the Clarksburg area at all during the construction project.

Can't go

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- A. Yes 1–5 times.
- B. Yes 6–10 times
- C. Yes 11–20 times
- D. Yes more than 20 times
- E) No.
- Once tunnel construction activities begin, how likely will it be for you to use the Meadows Slough / Upper Snodgrass Slough Anchorage area for your boating activities?
- A. It is somewhat likely that I will use the area.
- B. It is very likely that I will use the area.
- C. It is somewhat unlikely that I will use the area.
  - It is very unlikely that I will use the area.
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Prefer not to give contact info: or

Name:

Address:

Phone:

Email: A Campson@ comcast. Noi